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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/883,324	06/19/2001	Takenobu Kitahara	N01287US	2282

466 7590 11/14/2002

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EXAMINER	
DONG, DALEI	

ART UNIT	PAPER NUMBER
2875	

DATE MAILED: 11/14/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/883,324	Applicant(s) KITAHARA, TAKENOBU
	Examiner Dalei Dong	Art Unit 2875

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *19 June 2001* .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-6* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-6* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *19 June 2001* is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☒ Certified copies of the priority documents have been received in Application No. *09/883,324* .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other:

DETAILED ACTION

Specification

1. Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

2. The disclosure is objected to because of the following informalities: On page 2, line 1, the component light ray number of "102" should be light ray component number 302. On page 7, line 5, the put "on" should be put "between".

Appropriate correction is required.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 1-6 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding claims 1, 2 and 4, the phrase "approximately" renders the claim indefinite because it is unclear whether the limitations following the phrase are part of the claimed invention. See MPEP § 2173.05(d).

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claim 1 is rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent No. 5,855,994 to Biebuyck.

Regarding to claim 1, Biebuyck discloses in Figure 1, "a discrete organic light emitting device 10 is shown. It comprises an electrode 12 (cathode) situated on a substrate 11. On top of the electrode 12 a stack of three organic layers 13-15 is situated. The organic layer 13 serves as electron transport layer (ETL) and the organic layer 15 serves as hole transport layer (HTL). The organic layer 14 which is embedded between the two transport layers 13 and 15 serves as electroluminescent layer (EL). In the following, the stack of organic layers will be referred to as organic region, for sake of simplicity. In the present embodiment, the organic region carries the reference number 19. On top of the HTL 15, a top electrode (anode) 16 is formed. The upper most surface of the device 10 is sealed by a Siloxane film 17. This film 17 conforms to the device 10.

In the present example, the optical element may also be used to cover and protect cathode-up structures" (column 4, line 64-67 to column 5, line 1-13). Biebuyck further discloses "example of optical elements that may be formed in, or embedded by the encapsulant are: lenses, filters, color converts, gratings, diffusers, polarizers, and prisms just to mention some example. A mixture of color converts and attenuators may be brought into contact with, or formed on top of an organic multi-color light emitting array, in order to compensate for unequal efficiency of the light generation at different wavelength" (column 7, line 18-25).

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

8. Claims 2 and 3 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 5,855,994 to Biebuyck in view of U.S. Patent No. 4,963,788 to King.

Regarding to claims 2 and 3, Biebuyck discloses in Figure 1, "a discrete organic light emitting device 10 is shown. It comprises an electrode 12 (cathode) situated on a substrate 11. On top of the electrode 12 a stack of three organic layers 13-15 is situated. The organic layer 13 serves as electron transport layer (ETL) and the organic layer 15 serves as hole transport layer (HTL). The organic layer 14 which is embedded between

the two transport layers 13 and 15 serves as electroluminescent layer (EL). In the following, the stack of organic layers will be referred to as organic region, for sake of simplicity. In the present embodiment, the organic region carries the reference number 19. On top of the HTL 15, a top electrode (anode) 16 is formed. The upper most surface of the device 10 is sealed by a Siloxane film 17. This film 17 conforms to the device 10. In the present example, the optical element may also be used to cover and protect cathode-up structures" (column 4, line 64-67 to column 5, line 1-13). Biebuyck also discloses "conventional AgMg and ITO contacts still have a significant barrier to carrier injection in preferred ETL and HTL material, respectively. Therefore, a high electric field is needed to produce significant injection current" (column 2, line 23-27). Biebuyck further discloses "example of optical elements that may be formed in, or embedded by the encapsulant are: lenses, filters, color converts, gratings, diffusers, polarizers, and prisms just to mention some example. A mixture of color converts and attenuators may be brought into contact with, or formed on top of an organic multi-color light emitting array, in order to compensate for unequal efficiency of the light generation at different wavelength" (column 7, line 18-25). However, Biebuyck does not disclose a polarizing filter and a antireflection layer on top of the glass substrate. King teaches, "to minimize the reflection of ambient light, an antireflection coating is typically used on the front glass. Also dark backgrounds behind the display are commonly provided. The TFEL laminar stack is situated within an enclosure sealed against the substrate, and the rear wall of this closure is usually blackened to block light from extraneous light sources behind the display, and to absorb ambient light passing through the display from the

front. Another method of improving the contrast and attenuating the amount of light reflected from the rear aluminum electrodes is to use an external circularly polarized contrast enhancement filter in front of the display" (column 1, line 28-42). It would have been obvious to one of ordinary skills in the art at the time the invention was made to utilize the front glass substrate of King as the encapsulant of Biebuyck; further cover the glass substrate of King with optical element of Biebuyck and a circularly polarized filter and a antireflection film of King in order to provide an image display apparatus capable of advancing luminance viewed from a front face of a display face without disarrangement of display of an image, not limited to a self-emitting image display apparatus.

9. Claims 4-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 5,855,994 to Biebuyck in view of U.S. Patent No. 5,105,289 to Sonehara.

Regarding to claims 4 and 5, Biebuyck discloses an optical element and "examples of optical elements that may be formed in, or embedded by the encapsulant are: lenses, filter, color converters, gratings, diffusers, polarizers and prisms just to mention some examples" (column 7, line 18-25). However, Biebuyck does not disclose an image display apparatus is a liquid crystal display. Sonehara teaches in Figure 1, "a TN liquid crystal 104 is sandwiched between t a transparent substrate 101 and an opposite substrate 103 coated with a reflective film 102. The transparent substrate is required to have no anisotropy optically. In this example, a glass susbtrate is used. Numeral 105 is a transparent electrode to apply an electric field across the liquid crystal

layer. The other electrode is formed of a metal film and acts as a reflective film 102. A reflection decreasing coating 106 is formed over the surface of the transparent electrode and the light (incident)/output (transmission) surface to suppress the reflection of unnecessary light" (column 4, line 23-35). Sonehara also teaches in figure 2, "a perspectrive view showing an orientation of liquid crystal. Figure 2 shows that the twist angle201 of a nematic liquid crystal layer is 63°, the product of the birefringence of a liquid crystal and the thickness of a liquid crystal layer is 0.2 (μm in unit, hereinafter referred to as "Δnd"). The incident light is polarized to a linearly polarized light by polarizers which is placed closely to one another. The polarized light is adjusted to a degree that an electric field oscillating surface 204 travels along the director 203 for the liquid crystal molecular 202 at the input side" (column 4, line 43-53). Sonehara further teaches "again the light travels into the liquid crystal layer and is transmitted as a polarized light 403. Consequently, its polarization is rotated by about 90° at the output side. For this reason, the light is blocked by the polarizer, so that the reflectivity is decrease (in an off state). " (column 5, line 4-11). Sonehara further yet teaches "the low amount of light lost provides advantageous color images by using a color filter even under dim illumination, for example, a circumstances with no back light. This results from that the display glows brightly because the lower polarized light plate and the diffusion type reflection plate are not needed in the conventional TN type reflection liquid crystal element (in a transmission type mode in principle)" (column 6, line 29-36). It would have been obvious to one of ordinary skills in the art at the time the invention was made to place the optical element of Biebuyck either between the second polarizing

filter and antireflection film or the upper substrate and the second polarizing filter in order to provide an image display apparatus capable of advancing luminance viewed from a front face of a display face without disarrangement of display of an image, not limited to a self-emitting image display apparatus.

Conclusion

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

The following patents are cited to further show the state of the art with respect to image display apparatus.

U.S. Patent No. 4,143,297 to Fischer.

U.S. Patent No. 5,073,446 to Scozzafava.

U.S. Patent No. 5,559,400 to Nakayama.

U.S. Patent No. 5,724,108 to Shibata.

U.S. Patent No. 5,771,328 to Wortman.

U.S. Patent No. 6,169,708 to Kaneko.

U.S. Patent No. 6,441,551 to Abe.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dalei Dong whose telephone number is (703)308-2870. The examiner can normally be reached on 8 A.M. to 5 P.M..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sandra O'Shea can be reached on (703)305-4939. The fax phone numbers for the organization where this application or proceeding is assigned are (703)308-7722 for regular communications and (703)308-7724 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703)308-0956.

D.D.
November 7, 2002

Sandra O'Shea
Supervisory Patent Examiner
Technology Center 2800